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Comparison of the measured atmospheric muon flux with Monte Carlo simulations for the first KM3NeT/ARCA and KM3NeT/ORCA Detection Units

The KM3NeT Collaboration has successfully deployed the first detection units in the Mediterranean

Sea in 2016 and 2017 at the two sites in Italy and in France. The sample of data collected between December 2016 and January 2020 has been used to measure the atmospheric muon flux at two different depths under the sea level: 3.5 km with ARCA and 2.5 km with ORCA. The atmospheric muon flux represents an abundant signal for a neutrino telescope and can be used to test the reliability of the Monte Carlo simulation chain. In this contribution the mea surements are compared to Monte Carlo simulations based mainly on MUPAGE and CORSIKA codes. The main features of the simulation and reconstruction chain are discussed and presented in the poster.

Mini-abstract

"KM3NeT detectors are growing and the muon flux they measure agrees with the simulations"

Experiment/Collaboration

KM3NeT

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